

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (currently amended). A system for the determination of at least one ~~physiochemical~~ physicochemical property of a compound which comprises:

(i) a microfabricated device having an internal surface defining a first conduit for flowing a first fluid therethrough, compound being present in the first fluid, and a second conduit for flowing a second ~~conduit fluid~~ fluid therethrough;

(ii) wherein one or more restricted openings are present between the first and second conduits to allow contact between the first and second fluids at the one or more restricted openings via a ~~partitioning~~ partition interface formed between the first fluid and the second fluid, the partition interface being formed by contact between non-miscible phases;

(iii) a detector for measuring the amount of compound present within the first fluid or the second fluid or both; wherein presence of compound in either the first fluid or the second fluid or both is measured to determine the physicochemical property due to the partitioning of the compound through the partition interface.

2 (previously presented). A system as claimed in claim 1 which additionally comprises means for moving the first and/or the second fluid through the first and/or second conduits.

3 (previously presented). A system as claimed in claim 1 wherein the detector is an integral part of the microfabricated device.

4 (currently amended). A method for the measurement of one or more physicochemical property of a compound in a microfabricated device which method comprises:

(i) providing through an internal surface defining a conduit of the microfabricated device a flow of a first fluid and present within the first fluid is a compound;

(ii) moving the first fluid through the conduit to bring it into contact with a second fluid via a ~~partitioning~~ partition interface formed between the first fluid and the second fluid to allow any partitioning of the compound through the partition interface, the partition interface being formed by contact between non-miscible phases;

(iii) measuring the amount of compound present during and/or after partitioning between the first fluid and the second fluid in either the first fluid or the second fluid, or both.

5 (cancelled).

6 (previously presented). A method as claimed in claim 4 wherein the first and second fluids are liquids.

7-8 (cancelled).

9 (previously presented) A method as claimed in claim 4 wherein a second set of first and second fluids is introduced into the conduit after introduction of a barrier plug.

10 (currently amended). A system according to claim 1 in which the first fluid and second fluid are non-miscible phases and the ~~partitioning~~partition interface is formed by contact between the first fluid and the second fluid.

11 (currently amended). A system according to claim 1 in which the ~~partitioning~~partition interface formed between the first fluid and the second fluid is formed by a third fluid.

12 (currently amended). A ~~system~~method according to claim 4 in which the first fluid and the second fluid are non-miscible phases and the ~~partitioning~~partition interface is formed by contact between the first fluid and the second fluid.

13 (previously presented). A method according to claim 4 in which the partition interface between the first fluid and the second fluid is formed by a third fluid.

14 (previously presented). A method according to claim 4 in which the physicochemical property is partition coefficient.

15 (currently amended). A method according to claim 4 in which the first fluid flows through a first conduit and the second fluid flows through a second conduit, the

first and second fluids contacting via a ~~partitioning~~partition interface at one or more restricted openings between the first and second conduits.

16 (previously presented). A method according to claim 4 in which the first and second fluids are brought into contact as sequential lengths of fluid flowing along the conduit.

17 (previously presented). A method according to claim 16 in which the second fluid is firstly inserted, secondly the first fluid is inserted and then thirdly the second fluid is inserted a second time in the conduit.

18 (previously presented). A method according to claim 16 in which the first fluid is firstly inserted, secondly the second fluid is inserted and then thirdly the first fluid is inserted a second time in the conduit.

19 (previously presented). A method according to claim 16 in which the direction of movement of the flows is periodically reversed.

20 (previously presented). A method according to claim 17 in which the direction of movement of the flows is periodically reversed.

21 (previously presented). A method according to claim 18 in which the direction of movement of the flows is periodically reversed.